Reprinted from THE LANCET, *March* 6, 1915.

PROFESSOR EDWARD PARKES ON A SPIRIT RATION.

To the Editor of THE LANCET.

SIR,—In a discussion on the issue of a rum ration to our soldiers I have been expecting to see some reference made to the most important scientific experiments on this subject in the Ashanti Campaign in 1874, which were made by Edward Parkes, F.R.S., to whom the British army is enormously indebted for the improvements he effected in its hygiene. The results of these experiments were published in THE LANCET in August, 1874, and reprinted with introduction and appendices in a small pamphlet entitled "On the Issue of a Spirit Ration during the Ashanti Campaign of 1874" (London: Churchill, 1875). This report is so valuable that one would like to reprint it in its entirety. This being impossible I would like to quote some of his conclusions verbatim.

"It (alcohol) is not a perfectly reliable aid, and requires, when used at all, to be so with a full knowledge of its mode of action (p. viii.). The first effect of alcohol, when given in a moderate dose (for example, what is equal to one fluid ounce of absolute alcohol) is reviving, but this effect is transient. As shown both in the Report and in the first Appendix, the reviving effect goes off after, at the utmost, two and a half miles of additional march, and sometimes much before this; then the previous languor and sense of exhaustion not only return, but are sometimes more intense, and if alcohol is again resorted to its effects now are less satisfactory. Its reviving power is usually not so marked, and its peculiar anæsthetic and narcotising influence can only be distinctly traced. The men feel heavy, dull, disinclined to march, and are less willing and cheerful. It

is clear, then, that alcohol is not a very trustworthy aid; for supposing a commanding officer, having marched twelve or fourteen miles, and desiring to cover ten more miles, finds his men weary, and, not being able to halt and feed them, orders an issue of spirits of an amount sufficient to revive but not to depress. The first effect will be good, but in less than an hour his men will be as weary as before, or probably more so. If he then reissues the spirit within so short a period of time it is certain that in the case of many men, perhaps the majority, the marching power will be lessened (p. viii.). Even the reviving power of the first issue is not always so considerable as might be supposed, and, indeed, I have been surprised to find how little good effect it has sometimes produced. It appears to me, therefore, that spirits, as an issue, should be kept for emergencies, as when after great fatigue a sudden but short exertion is required, or, when a march being ended, there is great depression and failure of the heart's action, such as occurs when men have been thoroughly wetted during an exhausting march. To give strength to the men during the march, when the usual food cannot be taken, the meat extracts and coffee are both better than spirits (p. ix.). The first Appendix shows how unanimous the soldiers who were experimented upon were in assigning a great superiority in reviving and sustaining power to the meat extract over the spirit. The meat extract can also be repeated over and over again without injury, indeed with benefit. Coffee, again, is also very reviving during fatigue, and has the great advantage of quenching thirst much better than the meat extract, but it requires to be well made and to be palatable, which is not always easy to ensure in forced marches (p. x.)."

In his report Professor Parkes distinguishes sharply between *facts* and *opinions* (p. 28). The chief facts are:—

"1. Entire abstinence from alcohol did not make the men more sickly as a whole or more disposed to malarious fever (p. 28). 2. The marching powers of teetotallers were good. The evidence is against the usefulness of rum during marching. 3. The reviving effect of the rum when given at the end of the day was strongly spoken to (p. 31). Under exhaustion after great exertion alcohol will quicken the heart and act for a time as a restorative, though it may be hurtful or not useful during the actual period of exertion. The general feeling of warmth caused by alcohol and the temporary strengthening of the heart's action were also, no doubt, succeeded by a slight anæsthetic effect, making the sleep rather more profound. 4. The evidence of one or two of the men is that they marched better when rum had been issued on the previous evening. 5. Some of the evidence

indicated the greater power of digestion given by the rum and the increased appetite given by somewhat changing the monotony of the food. Such appear to be the main *facts* brought out by the evidence (p. 32)."

The opinions of the different witnesses were rather various, and therefore I may perhaps state shortly my own opinion founded on the facts. The use of alcohol in the body is like the use of a bill in commerce which may enable a merchant to tide over a financial difficulty by enabling him to make calls upon his capital in order to meet his present wants. If the call is simply temporary the bill may tide him over a crisis and will thus be most useful, but if his reserves are insufficient it will only hasten bankruptcy. In like manner alcohol enables a man to call on his reserves of strength and may enable him to make a spurt which he could not do without it. But if the exertion is to be long continued it simply accelerates exhaustion. After the exertion is over and the man is too tired to eat, the alcohol will help to call up his reserve strength and enable him to eat and digest better than he could without it, so that the increased assimilation of the evening meal and better sleep following it may enable him to march better next day. During exposure to cold in a healthy man the cutaneous blood-vessels contract and the blood is thus prevented from circulating over the surface and becoming cooled by the external cold. This protective mechanism sometimes continues to act after the necessity for it has ceased, and not only keeps the surface cold after the person has entered a warm room, but prevents the blood from conveying the external warmth to the internal organs. Alcohol dilates the cutaneous vessels, and by allowing warm blood from the interior of the body to circulate over the surface it causes a pleasant feeling of warmth when the external air is cold, and may also produce coolness by evaporation of sweat from the skin during exposure to heat. If the exposure to cold is short and slight, no harm may be done, but if the exposure is long continued or the external cold is great the skin is warmed at the expense of the vital organs and death results. For this reason the men who cut down

timber in the Canadian forests in winter, knowing that intoxication means death, remove temptation by prohibiting spirits entirely, or as Sir Anthony Hope (quoted by Parkes, p. 15) says, "It is an inexorable rule that all drinks found in the camp are destroyed." Meat extracts and coffee when they can be obtained are not liable to the same objections as alcohol, and Parkes has carefully drawn attention to their useful qualities.

In trying to sum up one is obliged to return to Parkes's statement (p. viii.) that alcohol "requires when used at all to be so with a full knowledge of its mode of action." Such a knowledge as this can hardly be possessed by combatant officers, but it may and should be possessed by medical officers, and therefore a spirit ration to soldiers should not be issued haphazard, but only on the order of a medical officer.

I am, Sir, yours faithfully,

LAUDER BRUNTON.

New Cavendish-street, W., March 1st.

Printed at The Lancet Office,
423, Strand, London, W.C.